National Aeronautics and Space Administration

AEROSPACE Frontiers

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NASA Glenn Earns Three More R&D 100 Awards

Three NASA Glenn research teams and their partners will be recognized by the editors of *R&D Magazine* for innovation in scientific software, environmental sciences and communications at the R&D 100 Awards banquet on Nov. 12 in Orlando, Fla.

The prestigious R&D 100 Award is given to the top 100 most technologically significant products of the year. It provides a mark of excellence known to industry, government and academia as "proof of product" innovation beneficial to a successful entry to the marketplace. Glenn award winners include:

The Optimal Trajectories by Implicit Simulation, version 4 (OTIS4) software is a general-purpose program used to perform trajectory performance studies primarily linked to the physical design of aerospace vehicles by factors such as weight, fuel tank volume and solar array. Team members include John Riehl (retired); Waldy Sjauw and Robert Falck, Mission Design and Analysis Branch; and Stephen Paris, Boeing Phantom Works, Seattle, Wash.

The Mini-Classifier is a compact, low-power differential mobility analyzer (DMA) that characterizes the size distribution of submicron particles, including the ultrafine range (<100 nm) of particles found in aerosols, which are of great interest to the epidemiology and respiratory health communities.

Continued on page 2

Ares I-X Set to Launch

The Ares I–X rocket is targeted to launch on Oct. 27 at NASA Kennedy Space Center as the first flight test of the Ares I crew launch vehicle, a major part of NASA's Constellation Program. NASA Glenn has played an important role in the project.

Did you know?

•Glenn designed and fabricated the 11 middle sections (segments) of the Ares I–X rocket, known as the upper stage simulator.

•About 200 Glenn civil servant and support service contractors supported the fabrication of the 11 segments over the past 3 years.

•The Glenn segments interface with every other Ares I–X element: first stage, crew module, launch abort system and roll control system.

•The upper stage simulator contains over 250 sensors that will provide flight data to help with the final design of Ares I.

• A plaque with the signatures of many of the Glenn personnel who worked on the segments is mounted inside one of the segments.

•In October 2008, the 11 segments were trucked from NASA Glenn to Wellsville, Ohio, where they were loaded onto a large ship, and transported to NASA Kennedy via the Ohio and Mississippi Rivers.

Left: Glenn's 11 segments were stacked into the Ares I–X vehicle. The rocket is currently housed at Kennedy's Vehicle Assembly Building awaiting rollout to the launch pad.

Inside

Jim Free Named Space Flight Systems Director

Free

Center Director Dr. Woodrow Whitlow Jr. recently named James Free as the new director of the Space Flight Systems Directorate. Prior to this appointment, Free served as chief of Glenn's Orion Project Office.

"Jim is exceptionally qualified for this position," said Whitlow. "His technical expertise and leadership capabilities will serve to keep Glenn in a position of strength for meeting the nation's space exploration goals."

Before joining Glenn in 1999, Free began his career at NASA Goddard, working in various capacities on Earth observing and communications spacecraft. At Glenn, he developed electric actuation technologies for the Next Generation Launch Technology Project and served as International Space Station liaison for the Fluids and Combustion Facility. More recently, Free served as the Orion Service Module manager and as the Orion Test & Verification manager at NASA Johnson.

Free earned a bachelor's degree in aeronautics from Miami University, Oxford, Ohio, and a master's degree in space systems engineering from Delft University, the Netherlands.

For more details on Free's background, visit http://www.nasa.gov/centers/glenn/news/index.html.

Glenn's 2009 R&D 100 Award Winners

Continued from page 1

Left to right: OTIS4's Sjauw, Riehl and Falck.

Dr. Simons

Team members include Paul Greenberg, Combustion and Reacting Systems Branch; Patrick Spanos and Al Blaze, Machining Branch; William Yanis, National Center for Space Exploration Research; and Da-Ren Chen and Chaolong Qi, Washington University, St. Louis, Mo.

Left to right: Mini-Classifier's Blaze, Yanis, Spanos and Greenberg.

The L–3 ETI Model 2300HE is a high-efficiency space traveling-wave tube amplifier for NASA's Lunar Reconnaissance Orbiter spacecraft. The high reliability microwave power amplifier is capable of transmitting video images and science data from six onboard instruments from the moon to Earth faster than any previous missions. Team members include Dr. Rainee Simons, chief of Glenn's Electron and Optoelectronic Device Branch; and Paul Spitsen, William Menninger, Neal Robbins, Daniel Dibb and Phillip Todd of L–3 Communications Electron Technologies Inc., Torrance, Calif.

These awards bring Glenn's total to 105, the most earned by NASA centers!

For more information on the R&D 100 Awards, visit http://www.rdmag.com/Awards/RD-100-Awards/R-D-100-Awards-Categories/.

Dual Career Ladder Promotions

Several NASA Glenn employees were recently promoted to the GS–14 and GS–15 levels through the Dual Career Ladder (DCL) Program, which enables outstanding technical contributors to attain the same prestige and compensation as individuals on a managerial track.

The DCL Program is based on the concept that while supervision is one ladder to high-level responsibility in scientific work, there is another ladder of personal creativity and scientific contribution. This makes it possible for the contributions of a highly creative, nonsupervisory scientist or engineer to merit the same grade as an individual at the supervisory level.

"It was especially pleasing to be able to open up the DCL process to more people at the center," said Associate Director for Planning & Evaluation Dr. Howard Ross. "As the center sharply increased its product development projects in exploration, our engineers and researchers began taking on new, higher-level responsibilities. The revised DCL process accounts for this increase."

Promotions to the GS–14 level:
Engineering Directorate: Homer Fincannon • Tony Shook • John Siamidis • Denise Varga • Frederick Wolff

Research and Technology Directorate: Dr. Juan Agui • Ken Burke •Dr. Robert Goldberg • Hani Kamhawi • Jonathan Litt • Sandi Miller •Phil Paulsen • Dr. Dan Sutliff • Dr. John Slater • Scott Thorp • Dr. Mario Vargas • Dr. Jennifer Xu

Promotions to the GS–15 level:
Engineering Directorate: Leon Gefert • Thomas Goodnight • David Manzella • Steven Oleson • John Thesken

Facilities and Test Directorate:
Edward Emery

Research and Technology Directorate: Dr. Grigory Adamovsky • Dr. Milind Bakhle •Dr. Bilal Bomani • Dr. David Chao • Dr. Jim DeBonis • Susan Draper • Dennis Fox • Dr. James Gaier • Dr. Jim Heidmann • Dr. Yolanda Hicks • Mike Krasowski •Dr. Charles Lawrence • Dr. Robert Okojie

2009 Center Picnic

An estimated 1,150 employees gathered at the Lewis Field Picnic Grounds for the NASA Glenn Center Picnic on Aug. 28. Employees from across the center organized a variety of activities, including: a hotdog eating contest, scavenger hunt, volleyball, badminton, corn hole, horseshoes and water balloon toss. Acorn Food Services catered the hearty picnic fare while the band, Gypsy, kept the party hopping with a mix of classic rock and current pop. Glenn's newest outreach exhibit, the Mobile Orion Vehicle Explorer, made an exciting debut and the Pollution Prevention (P^2) team set up a recycling and composting station that diverted an estimated 4.26 tons of trash from landfills.

Photos by Bridget Caswell

Thanks to this year's Picnic Committee

Victoria Anzalone • Bryan Boyd• Bridget Caswell •Kelly DiFrancesco • Shane Goodman • Michelle Kenzig• Susan Kraus • Valerie Lyons• Lori Manthey, chair •Matt Murray • Teresa Monaco •Michelle Mrdenovich • Calvin Ramos • Jessica Roberts• Kelly Shankland • Raymond Steiner •Orlando Thompson

Students Venture Beyond the Classroom

For 8 to 10 weeks this summer, 181 college and high school summer interns from across 23 states rolled up their sleeves to tackle technical assignments and skill-building activities aimed at linking textbook theory with real life experiences. Members of Glenn's Educational Programs Office (EPO) and the Ohio Aerospace Institute designed and oversaw Glenn's Summer Internship Program, which promotes professional growth and provides skill development. Here's a look at three ways Glenn interns are excelling through these on-the-job experiences.

EXPLORING CAREERS

Not sure what you want to do with your life? Glenn's summer programs allow students to jump right in and get their feet wet in an occupation or field of interest.

Photo by S. Jenise Veris

Moss, center, volunteers at RePlay *workshop for Glenn interns.*

This summer, 46 high school interns explored the field of electronics during a workshop/service project conducted with Glenn mentors and volunteers from RePlay for Kids, a nonprofit organization that modifies battery-operated toys with assistive devices for children with disabilities. Christa (Wheeler) Moss, a Ph.D. candidate in Biomedical Engineering at Case Western Reserve University and Lewis' Educational and Research Collaborative Internship Program (LERCIP) alumnus, was one of the volunteers. Moss said interning with the Flight Communications Branch (2000–01) helped her discover that combining her knowledge in physics with a desire to work with people would be more gratifying.

"The enjoyment and experience I gained from developing a game for the visually impaired as an undergraduate project led me to volunteer for RePlay for Kids."

COMMUNICATING COMPETENCY

What does it take to be a professional? Summer interns work alongside Glenn professionals who share their knowledge and provide guidance. This year, over 200 Glenn employees served as mentors.

For the past 3 years, Jorge Jimenez, a Motivating Undergraduates in Science and Technology (MUST) scholar and senior math major from Boston University, has worked side-by-side with Angela Harrivel, his mentor and project manager for NASA's Functional Near Infrared Spectroscopy (fNIRS) project. Jimenez' passion for research and Harrivel's encouragement has enabled his continued involvement in fNIRS, a noninvasive functional neuroimaging technique for monitoring pilot brain activity for mental awareness.

According to MUST project manager Vanessa Webbs, Jimenez' enthusiasm for NASA and ability to articulate his experience to various groups confidently and competently earned him a trip to a NASA launch as a 2009 NASA Student Ambassador.

C-2008-1912 Photo by Marvin Smith

Jimenez and Harrivel in lab.

BUILDING RELATIONSHIPS

For some students, the relationships they develop with their mentors and with one another is an unexpected bonus.

C-2009-2898 Photo by Marvin Smith

Back row, (MENTORS): Seth Matthews, Dr. Kul Bhasin, Eric Knoblock, Brian Barritt, Bert Golden. Front row, (INTERNS): David Huynh, Todd MacMillan, Kevin Bhasin, Devin Schwab, Rachel Coulter, Nicholas Iaconis and Kathryn Trase.

This summer, Dr. Kul Bhasin, project manager for Glenn's Systems Networks and Architecture Project, arranged for seven interns from Glenn's LERCIP and Interdisciplinary National Science Project Incorporating Research and Education Experience (INSPIRE) programs to work on a pilot project for engineering a communication system as an educational platform to learn NASA communication systems engineering processes, design and analysis tools. The students, who shared five mentors (all new hires within their division), bonded quickly and supported one another while learning new software critical to completing a challenging assignment: design a complete lunar communication network.

"In addition to receiving the first LERCIP Team Award, these students learned that building respectful relationships with their mentors and with one another was key to the success of this pilot project," Bhasin said.

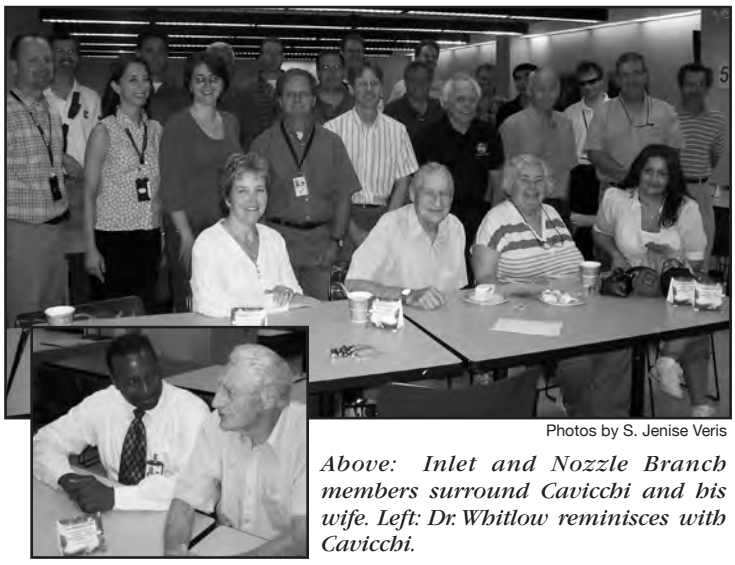
For details on the various student summer programs, visit www.nasa.gov/centers/glenn/education.

—BY S. JENISE VERIS

News and Events

Salute to Cavicchi's 60-Plus Years

Richard "Dick" Cavicchi has brought to a close his distinguished NACA/NASA career in aerodynamics. With his wife, Mary, at his side, Cavicchi bid farewell to his co-workers during a cake and coffee reception on Aug. 7. Center Director Dr. Woodrow Whitlow Jr. and Deputy Director Ray Lugo were among the guests at the retirement reception hosted by Cavicchi's branch chief, Mary Jo Long-Davis, and members of the Inlet and Nozzle Branch. Over his 62 years of service, Cavicchi published more than 40 technical papers related to his contributions in turbine engine technology, nuclear propulsion, computational fluid dynamics, analysis of aircraft inlets, ground power industrial utility systems and wind power analysis. He also was an avid supporter of awareness activities throughout the center.



Photos by S. Jenise Veris

Above: Inlet and Nozzle Branch members surround Cavicchi and his wife. Left: Dr. Whitlow reminisces with Cavicchi.

CFCU Carnival: People Helping People

On Aug. 21, Lewis Field employees "threw in" their support for the 3rd Annual Century Federal Credit Union (CFCU) Carnival to benefit the Children's Miracle Network. CFCU staff sold tickets for hot dog lunches in combination with a chance to send Member Services Representative Lorie Mueller into the dunk tank located outside the Employee Center. Participants also had a chance to win 1 of 14 gift-filled baskets donated by local vendors and various organizations across the center. CFCU raised nearly $2000 for Cleveland's Rainbow Babies & Children's Hospital, a local member of the Children's Miracle Network.

Photo by S. Jenise Veris

Linda Mayes, SGT/ Program and Project Assurance Division, puts her arm into sending CFCU's Mueller for a swim.

C-2009-3269

Photo by Bridget Caswell

Birds Eye View

On Sept. 2, Glenn employees enjoyed an up-close look at America's frontline fighter pilots, the U.S. Air Force Thunderbirds, and their aircraft parked on Glenn's tarmac. The airmen answered questions about aerial maneuvers and took photos with employees while maintenance crews performed inspections on their powerful F–16 jets. The Thunderbirds are part of the main attraction for the annual Cleveland National Air Show held Labor Day weekend.

Senate Staffer Visits

C-2009-2786

Photo by Michelle Murphy

Gabrielle Batkin, clerk of the Senate Appropriations Subcommittee on Commerce, Justice and Science, and Mary Kerwin, acting assistant administrator for Legislative and Intergovernmental Affairs, visited Lewis Field on Aug. 14. They met with Center Director Dr. Woodrow Whitlow Jr., senior managers and staff to learn about Glenn's technical competence and efforts in support of the agency's mission. The briefing was followed by a tour of several research facilities. Pictured above is, far left, Eric Clark, briefing Batkin, front left, and Kerwin, right, in the Energy Conversion Laboratory.

People

Women of Color 2009 Award Winners

Glenn employees earned seven of eight 2009 Women of Color Awards that will be presented to NASA women of significant achievement at the 14th Annual Women of Color STEM Conference, October 30–Nov1, in Dallas. The conference, co-hosted by Career Communication Group's *Women of Color Magazine* and the IBM Corporation, focuses on professional development, networking and recruiting of minority women for careers in science, technology, engineering and math.

Glenn honorees include **Mei-Hwa Liao**, chief, Applied Structural Mechanics Branch for Professional Achievement in Government; **Hortense Burt,** Center Operations Directorate (nominated on detail from NASA Kennedy Space Center's Education Division) for Educational Leadership; **Cynthia Calhoun**, deputy chief, Program and Project Assurance Division and **Gynelle Steele**, program manager, Small Business Innovative Research for Special Recognition; **Marisabel Lebron-Colon**, Polymers Branch, **Dr. QuynhGiao Nguyen**, Durability and Protective Coatings Branch, and **Carol Tolbert**, Launch Systems Project Office, for Technology All-Stars. For more information on the award winners, visit http://www.womenofcolor.net/.

Burt

Calhoun

Lebron-Colon

Liao

Dr. Nguyen

Steele

Tolbert

COTRs Recognized for Helping Infuse Technology

Glenn's Technology Transfer and Partnership Office acknowledged the value of Small Business Innovation Research (SBIR) Contracting Officer Technical Representatives (COTR) during an appreciation luncheon on June 18. Research and Technology Directorate employees **Dale Hopkins, Mike Piszczor, Dr. Gary Roberts, Dr. Robert Romanofsky** and **Jeff Schreiber,** COTRs for SBIR contracts, were recognized for major contributions in infusing SBIR-developed technology into the private sector.

Left to right: Schreiber, Dr. Romanofsky, Piszczor and Dr. Roberts. Not pictured: Hopkins.

Dr. Handschuh

Dr. Robert Handschuh, Structures and Materials Division, was named a Technical Fellow at the American Helicopter Society (AHS) 65th Annual Forum & Technology Display in May. AHS members are granted Technical Fellows based on a career of notable, outstanding technical achievement that has contributed significantly to the goals and objectives of the vertical flight industry.

Palaszewski

Bryan Palaszewski, Aeropropulsion Division, shared a Group Achievement Award presented to the Crew Exploration Vehicle (CEV) Aeroacoustics Testing Team at the NASA Ames Honor Award Ceremony held in June. The team was recognized "for leading a series of aeroacoustic tests that have made significant contributions to the design and development of the Crew Exploration Vehicle." Palaszewski supported the team in planning a series of aeroacoustic tests for the CEV's Launch Abort System.

Retirements

Cavicchi

Richard Cavicchi, Inlet and Nozzle Branch, Aeropropulsion Division, retired on Aug. 31, 2009, with 66 years of federal service, including 62 with NASA.

Saettel

William Saettel, Technology Transfer and Partnership Office, External Programs Directorate, retired on Sept. 3, 2009, with 36 years of federal service, including 28 with NASA.

Wendell White, Aero Power & Propulsion Technical Branch, Testing Division, retired on Sept. 3, 2009, with 42 years of NASA service.

Calendar

IFPTE LOCAL 28, LESA MEETING: LESA will hold its next membership meeting on Wednesday, Oct. 14 at noon in the Small Dining Room of the Employee Center.

PBS COMMUNITY INFORMATION SESSION: The public is welcome to attend the final Plum Brook Station (PBS) Reactor Decommissioning Community Information Session on Wednesday, Oct. 21 from 7–9 p.m. at Sandusky High School, 2130 Hayes Avenue. The session will also include displays on active NASA PBS facilities and a proposed wind farm, along with the AeroBus and Apollo 40th Anniversary display. A Decommissioning Workgroup meeting precedes the Community Information Session at 5:30 p.m. and is also open to the public.

DISABILITY AWARENESS: Max Edelman, a blind survivor of Nazi death camps, will be the keynote speaker for the Disability Awareness Month Observance on Thursday, Oct. 22 from 1 to 3 p.m., Ad. Bldg. Auditorium.

AFGE MEETING: AFGE Local 2182 will hold its next membership meeting on Wednesday, Nov. 4 at 5 p.m. at Denny's Restaurant, 25912 Lorain Road, North Olmsted.

NASA RETIRED WOMEN'S LUNCHEON: The next luncheon will be at Moosehead Hook and Ladder Restaurant, 7987 Columbia Road (north of the tracks) in Olmsted Falls on Thursday, Nov. 19 at noon. Reservations are a must—contact Gerry Ziemba 330-273-4850.

DEADLINES

News items and brief announcements for publication in the November issue is noon, October 23. Larger articles require at least 1 month notice.

http://aerospacefrontiers.grc.nasa.gov

Hermes Award

2008 APEX AWARDS FOR PUBLICATION EXCELLENCE

In Memory

Robbins

"Red" Robbins: Dynamic Leader Dies

William H. "Red" Robbins, 82, who retired in 1986 with 39 years of NACA/NASA service, died Aug. 22. He was a scientist who enjoyed a distinguished career at NASA Glenn (then Lewis) leading early research on nuclear-powered rockets, alternative energy, satellites and more.

Robbins was a graduate of the University of Michigan and Case Institute of Technology. His early work focused on the development of axial-flow compressors for jet engines. He became involved in nuclear energy research for rockets with the agency's transition to NASA in 1958 and in the development of the agency's first nuclear-powered rocket engine for long-term space missions. He would, later in his career, become project manager for the Shuttle/Centaur rocket payload program.

During a detail at headquarters in 1973, Robbins gained valuable experience in communication satellites development that was applied on his return to NASA Glenn the next year when he became project manager for the Communications Technology Satellite Program. The satellite successfully launched in 1976 with the ability to boost signals of light and sound. Robbins was part of the NASA team honored with a 1985 Emmy from the broadcast industry for the team's efforts and resulting technological advances.

The center made great strides in alternative energy research under Robbins leadership as chief of the Wind and Stationary Power Division. Thirteen domestic wind turbines were constructed across the country, between 1975 and 1979, to aid the energy crisis.

Robbins is remembered not only for his technical excellence, but also for a dynamic personality that enabled him to assemble and motivate teams. Robbins is survived by his wife, Lucille (Shaeffer), who also served at Glenn.

Willis M. "Bill" Braithwaite, 85, who retired in 1988 with 38 years of NASA service, died April 11. Braithwaite served as a mechanical engineer supporting the wind tunnel facilities. He was also a U.S. Navy veteran of WW II.

Richard W. Wilson Sr., 83, who retired in 1985 with 37 years of NACA/NASA service, died March 12, 2009. Wilson retired as chief of the Research Installations and Utilities Support Branch in the Facilities and Operations Division. He had oversight of more than 70 people responsible for maintaining operations in both the 8-by 6-foot and 10-by 10-foot supersonic wind tunnels ensuring that the research was accomplished on schedule. His organization also performed installation work on the Helicopter Transmission Test rig and other major test rigs.

Isidor Zaplatynsky, 85, who retired in 1990 with 27 years of NASA service, died July 16. Zaplatynsky was a scientist/materials research engineer who served in the Materials Division. He developed several patents, including a device for coating materials with a laser. Zaplatynsky also earned several Space Act Awards and Suggestion Awards, such as a cost-saving pneumatic piston that provided a simple and inexpensive means of automatically cycling test specimens. He was an active member of the Lewis Camera Club and enjoyed participating in chess tournaments.

In Appreciation

I am very grateful to the NASA family for the outpouring of cards, hugs, donations and other expressions of sympathy on the death of my mother Jeanette Parker. Your kindness means so much to me.

—Valarie Roundtree

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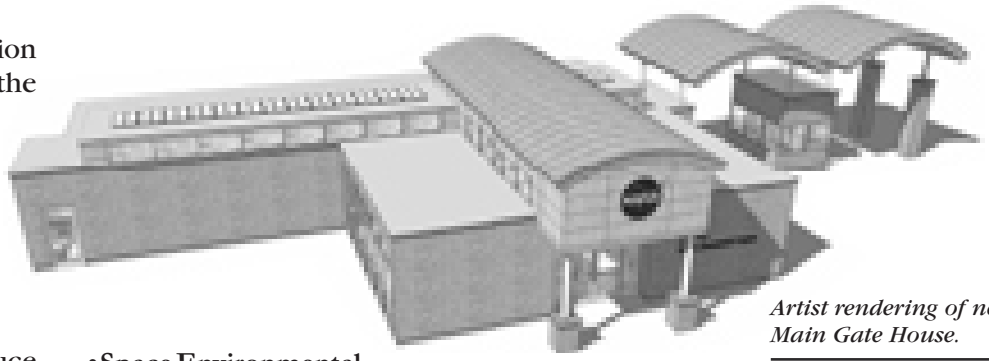
Keep Alert! High-Impact Construction Underway

Several highly visible construction activities, many associated with the initial execution of the NASA Glenn Facilities Master Plan, are underway at Lewis Field and Plum Brook Station (PBS). Construction will continue through summer 2010. Projects underway include:



Artist rendering of new Main Gate House.

•**Demolition of facilities** to reduce vacated infrastructure due to aging.

• **Site and utility work** to rehabilitate roofs, waterlines and high-voltage systems in active facilities.

• **New Main Gate House** to address Homeland Security requirements at Lewis Field.

•**New Shipping and Receiving building at Lewis Field** (outside Main Gate) to increase security and improve inspection of commercial vehicles entering the center.

•**Space Environmental Project at PBS** to upgrade the Space Power Facility to accommodate testing for next generation space flight hardware.

"These projects reflect NASA's goal to reduce infrastructure by demolishing several old facilities and replacing only what is necessary with new, more energy-efficient structures," explained Gene Pinali, team lead, Project Management Branch.

Certain construction activities will require temporary road closures and redirecting of traffic patterns that could change frequently. Employees are asked to allow for extra time entering/exiting the center and to consider entering/exiting through the West Gate. Please check *Today@Glenn* daily for any updates on road or parking area closures.

For detailed information on the construction projects, visit http://fd.grc.nasa.gov/activeprojects.cfm.

—BY DOREEN B. ZUDELL